



The LifeWatch ERIC Biodiversity
& Ecosystem eScience Conference

PLOVDIV, BULGARIA

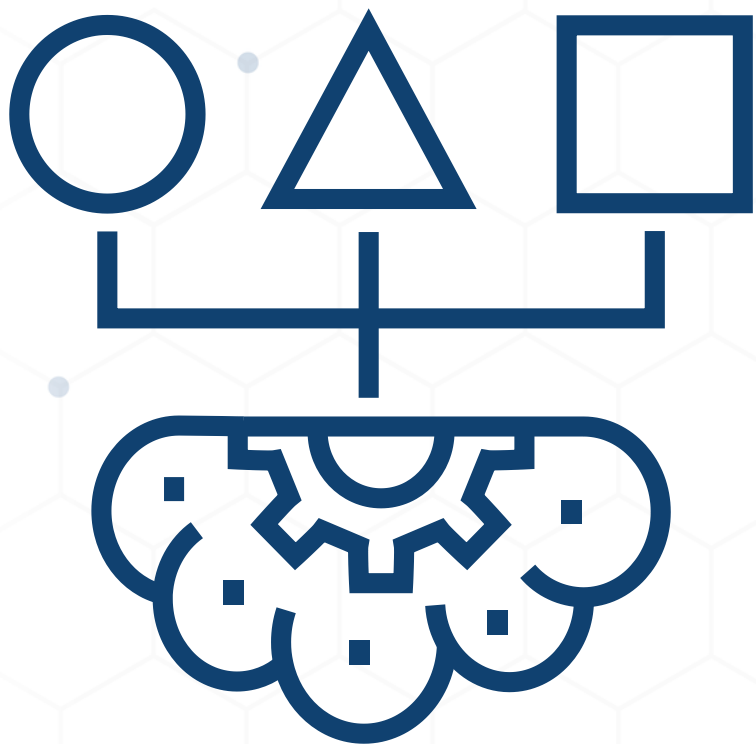
7-10 JULY 2026

An evolutionary perspective about digital twins

Presenter: Agustín Riscos Núñez

09 July 2026





29 members

Modelling and workflows thematic working group

Coordinators



Maria Paniw

✉ maria.paniw@ebd.csic.es

[View profile](#)



Agustín Riscos Núñez

✉ ariscosn@us.es

[View profile](#)



Can we (AI) guess the future?



DATA

Data $\neq$ Information $\neq$ Knowledge



MODEL

Simple, Relevant, Accurate, Tractable



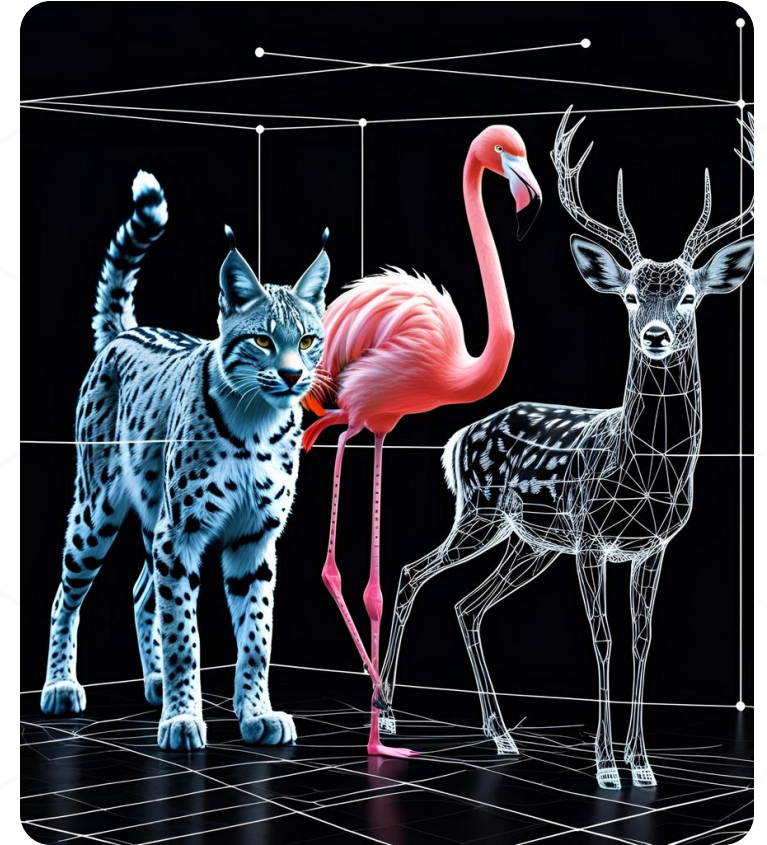
SOLUTION

Problem specification $\implies$ Solution's Quality
Cost, Security, ...

DT definition

*A digital twin is a **virtual representation** of real-world **entities** and **processes**, synchronized at a specified **frequency** and **fidelity**.*

www.digitaltwinconsortium.com

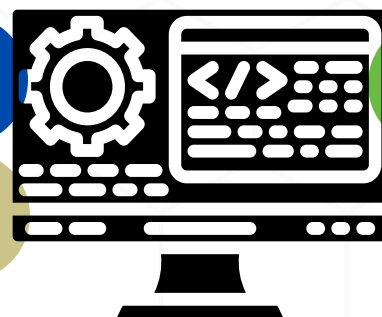
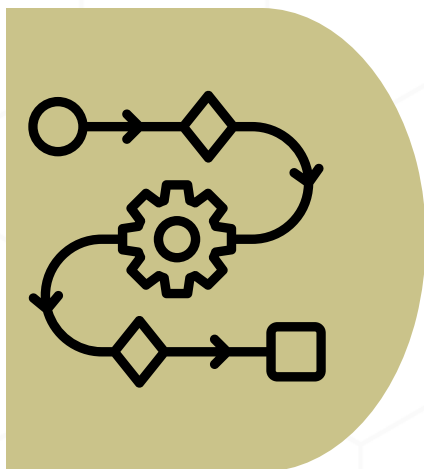


Interdisciplinary approach

DATA



MODEL



**Workflows & VREs
as building blocks**



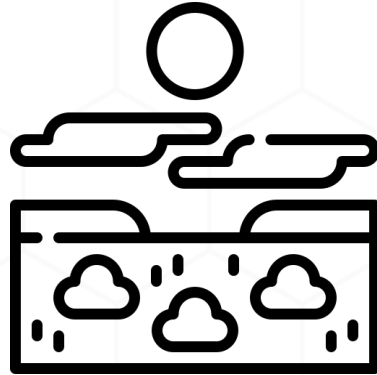
**DECISION
MAKING**

Ecological digital twins* in 5 ecosystem

*scalable workflows integrating biodiversity, environmental, and genomic data into standardised modelling pipelines



Wetlands



Shrublands



Forests



Rivers

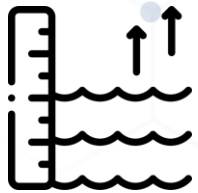


High mountains

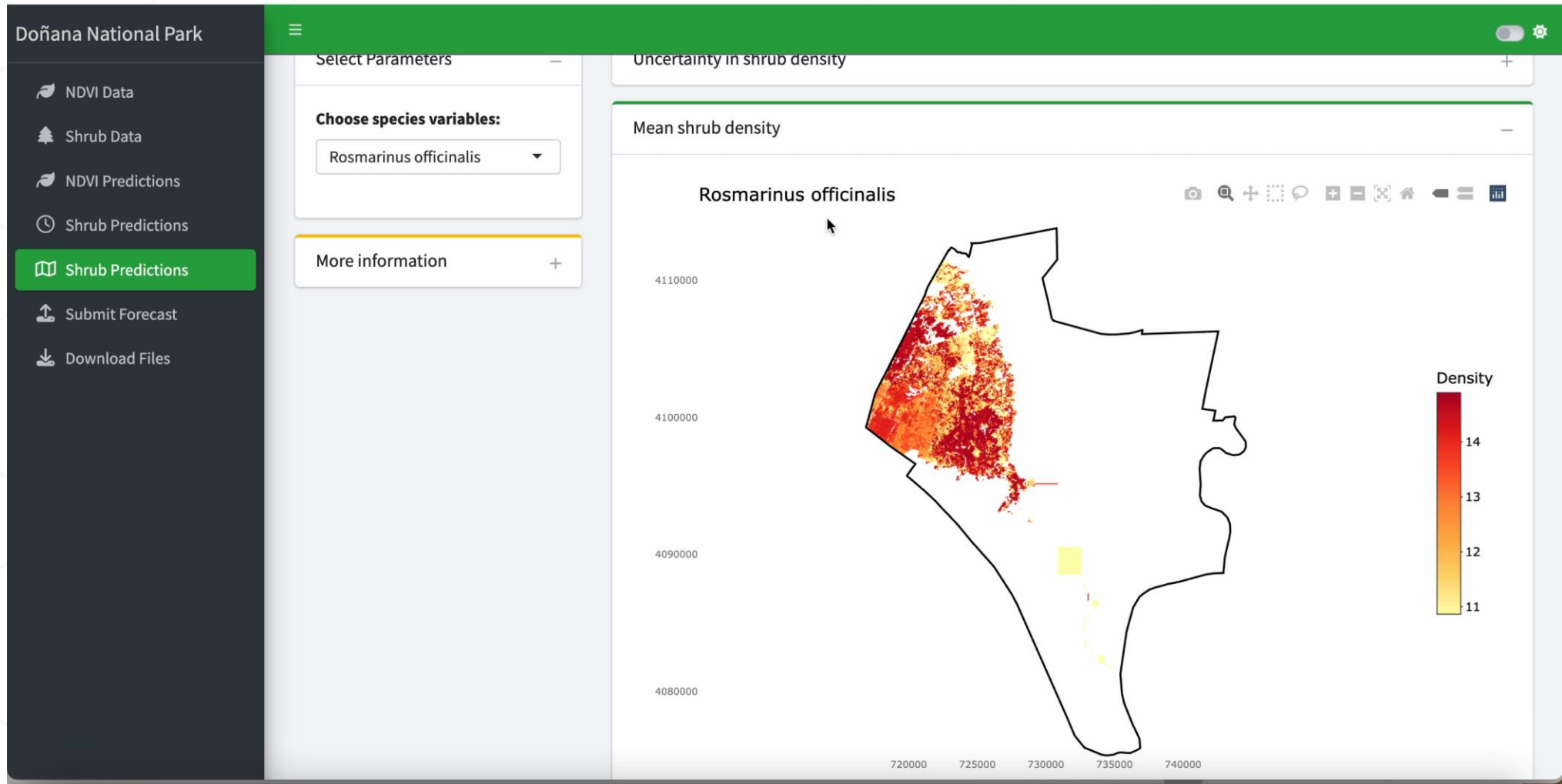




Doñana Digital Twin: A concrete example



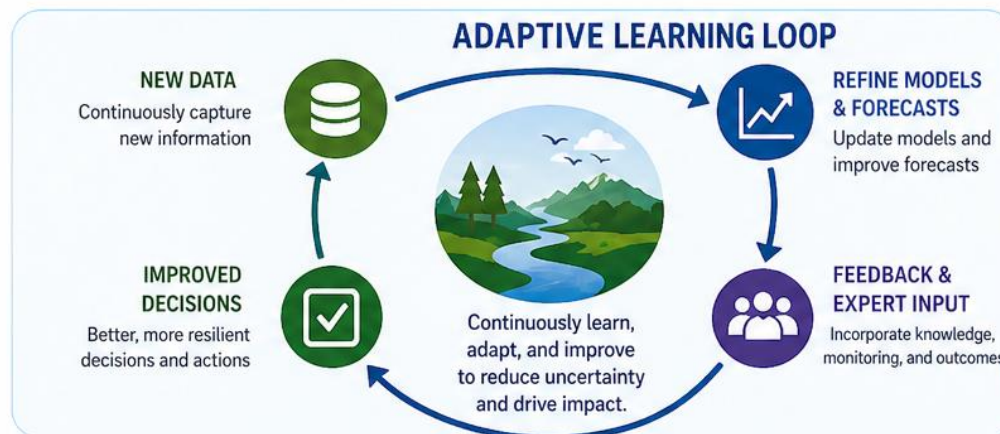
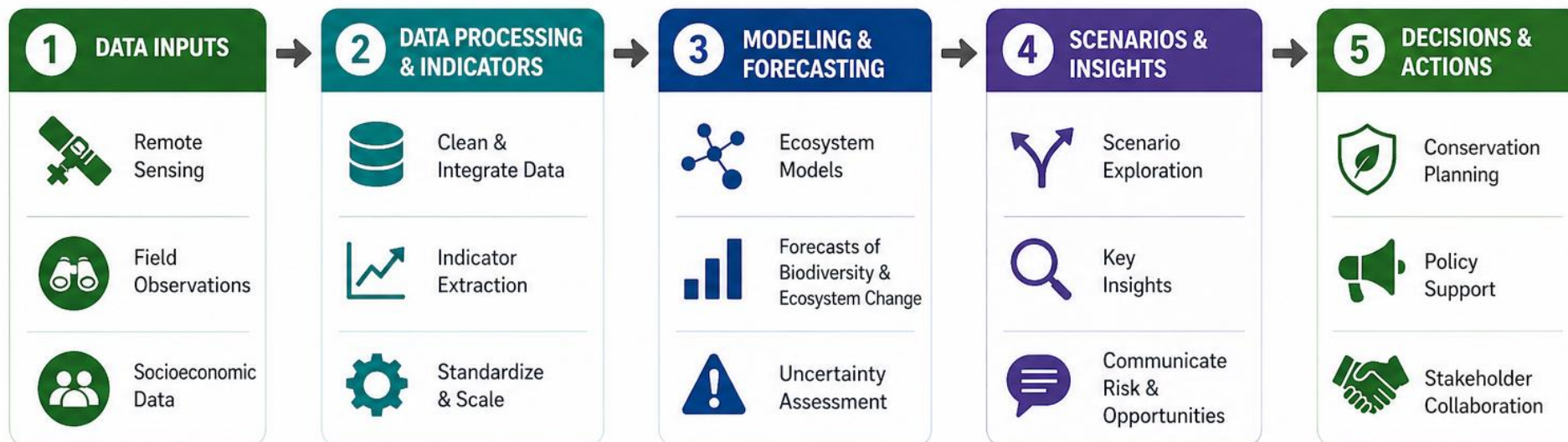
Slide by
Maria Paniw





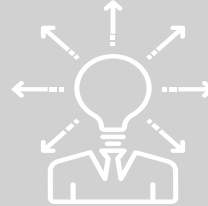
A Dynamic Forecasting System for Biodiversity & Ecosystem Change

From data to forecasts to action—powered by adaptive learning



GOAL: Anticipate and adapt to biodiversity and ecosystem change for a thriving planet.

Digital Twins: An evolutionary perspective



WHAT

Not just a (black box) model



HOW, WHY, WHEN, WHERE

Face challenges together,
ask the right questions.
Open and sustainable science (FAIR).



WHO

Experts, policy-makers, citizens...

AND YOU!



The LifeWatch ERIC Biodiversity
& Ecosystem eScience Conference
PLOVDIV, BULGARIA 7-10 JULY 2026

THANK YOU!

Questions?

ariscosn@us.es

